

## WHAT IS CLAIMED IS:

1. A compound of formula (I), pharmaceutically acceptable salt thereof:



(I)

wherein V is a 5-membered heteroaryl ring containing up to four heteroatoms selected from O, N and S, optionally substituted by C<sub>1-4</sub> alkyl;

A is -CH=CH- or (CH<sub>2</sub>)<sub>n</sub>;

B is -CH=CH- or (CH<sub>2</sub>)<sub>n</sub>, where one of the CH<sub>2</sub> groups may be replaced by O, NR<sup>5</sup>, S(O)<sub>m</sub>, C(O) or C(O)NR<sup>12</sup>;

n is independently 0, 1, 2 or 3;

m is independently 0, 1 or 2;

R<sup>1</sup> is 3- or 4-pyridyl, 4- or 5-pyrimidinyl or 2-pyrazinyl, any of which may be optionally substituted by one or more substituents selected from halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> fluoroalkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>3-7</sub> cycloalkyl, aryl, OR<sup>6</sup>, CN, NO<sub>2</sub>, S(O)<sub>m</sub>R<sup>6</sup>, CON(R<sup>6</sup>)<sub>2</sub>, N(R<sup>6</sup>)<sub>2</sub>, NR<sup>10</sup>COR<sup>6</sup>, NR<sup>10</sup>SO<sub>2</sub>R<sup>6</sup>, SO<sub>2</sub>N(R<sup>6</sup>)<sub>2</sub>, a 4- to 7-membered heterocyclyl group or a 5- or 6-membered heteroaryl group;

R<sup>2</sup> is 4- to 7-membered cycloalkyl substituted by R<sup>3</sup>, C(O)OR<sup>3</sup>, C(O)R<sup>3</sup> or S(O)<sub>2</sub>R<sup>3</sup>, or 4- to 7-membered heterocyclyl, containing one or two nitrogen atoms which is unsubstituted or substituted by C(O)OR<sup>4</sup>, C(O)R<sup>3</sup>, S(O)<sub>2</sub>R<sup>3</sup>, C(O)NHR<sup>4</sup>, P(O)(OR<sup>11</sup>)<sub>2</sub> or a 5- or 6-membered nitrogen containing heteroaryl group;

R<sup>3</sup> is C<sub>3-8</sub> alkyl, C<sub>3-8</sub> alkenyl or C<sub>3-8</sub> alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and may contain a CH<sub>2</sub> group that may be replaced by O, or C<sub>3-7</sub> cycloalkyl, aryl, heterocyclyl, heteroaryl, C<sub>1-4</sub> alkylC<sub>3-7</sub> cycloalkyl, C<sub>1-4</sub> alkylaryl, C<sub>1-4</sub> alkylheterocyclyl or C<sub>1-4</sub> alkylheteroaryl, any of which may be optionally substituted with one or more substituents selected from halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> fluoroalkyl, OR<sup>6</sup>, CN, CO<sub>2</sub>C<sub>1-4</sub> alkyl, N(R<sup>6</sup>)<sub>2</sub> and NO<sub>2</sub>;

R<sup>4</sup> is C<sub>2-8</sub> alkyl, C<sub>2-8</sub> alkenyl or C<sub>2-8</sub> alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and may contain a CH<sub>2</sub> group that may be replaced by O, or C<sub>3-7</sub> cycloalkyl, aryl, heterocyclyl, heteroaryl, C<sub>1-4</sub> alkylC<sub>3-7</sub> cycloalkyl, C<sub>1-4</sub> alkylaryl, C<sub>1-4</sub> alkylheterocyclyl or C<sub>1-4</sub> alkylheteroaryl, any of which may be substituted with one or more substituents selected from halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> fluoroalkyl, OR<sup>6</sup>, CN, CO<sub>2</sub>C<sub>1-4</sub> alkyl, N(R<sup>6</sup>)<sub>2</sub> and NO<sub>2</sub>;

R<sup>5</sup> is hydrogen, C(O)R<sup>7</sup>, S(O)<sub>2</sub>R<sup>8</sup>, C<sub>3-7</sub> cycloalkyl or C<sub>1-4</sub> alkyl optionally substituted by OR<sup>6</sup>, C<sub>3-7</sub> cycloalkyl, aryl, heterocyclyl or heteroaryl, wherein the cyclic groups may be substituted with one or more substituents selected from halo, C<sub>1-2</sub> alkyl, C<sub>1-2</sub> fluoroalkyl, OR<sup>6</sup>, CN, N(R<sup>6</sup>)<sub>2</sub> and NO<sub>2</sub>;

R<sup>6</sup> are independently hydrogen C<sub>1-4</sub> alkyl, C<sub>3-7</sub> cycloalkyl, aryl, heterocyclyl or heteroaryl, wherein the cyclic groups may be substituted with one or more substituents selected from halo, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> fluoroalkyl, OR<sup>9</sup>, CN, SO<sub>2</sub>CH<sub>3</sub>, N(R<sup>10</sup>)<sub>2</sub> and NO<sub>2</sub>; or a group N(R<sup>10</sup>)<sub>2</sub> may form a 4- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from O and NR<sup>10</sup>;

R<sup>7</sup> is hydrogen, C<sub>1-4</sub> alkyl, OR<sup>6</sup>, N(R<sup>6</sup>)<sub>2</sub>, aryl or heteroaryl;

$R^8$  is  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl, aryl or heteroaryl;

$R^9$  is hydrogen,  $C_{1-2}$  alkyl or  $C_{1-2}$  fluoroalkyl;

$R^{10}$  is hydrogen or  $C_{1-4}$  alkyl;

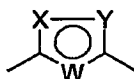
$R^{11}$  is phenyl; and

$R^{12}$  is hydrogen,  $C_{1-4}$  alkyl or  $C_{3-7}$  cycloalkyl;

provided that the compound is not:

- a) 4-(5-piperidin-4-yl-[1,2,4]oxadiazol-3-yl)pyridine;
- b) 4-(3-pyridin-4-yl-[1,2,4]oxadiazol-5-yl)piperidine-1-carboxylic acid butyl ester;
- c) 4-[5-(4-butylcyclohexyl)-[1,2,4]oxadiazol-3-yl]pyridine;
- d) 3-[5-(4-butylcyclohexyl)-[1,2,4]oxadiazol-3-yl]pyridine; or
- e) 3-[5-(4-propylcyclohexyl)-[1,2,4]oxadiazol-3-yl]pyridine.

2. A compound according to claim 1, or a pharmaceutically acceptable salt thereof, wherein V represents a 5-membered heteroaryl ring containing up to three heteroatoms selected from O, N and S of the formula:



wherein W, X and Y represent the positions of the heteroatom(s) or otherwise represent CH.

3. A compound according to claim 2, or a pharmaceutically acceptable salt thereof, wherein two of W, X and Y are N, and the other is O.
4. A compound according to claim 2 or 3, or a pharmaceutically acceptable salt thereof, wherein W is N.
5. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein the n groups of A and B do not both represent 0.
6. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein in A, n is 0, 1 or 2.
7. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein in B, n is 2 or 3.
8. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein  $R^1$  is 4-pyridyl optionally substituted by 1 or 2 halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{3-7}$  cycloalkyl, aryl,  $OR^6$ , CN,  $NO_2$ ,  $S(O)_mR^6$ ,  $CON(R^6)_2$ ,  $N(R^6)_2$ ,  $NR^{10}COR^6$ ,  $NR^{10}SO_2R^6$ ,  $SO_2N(R^6)_2$ , 4- to 7-membered heterocyclyl or 5- or 6-membered heteroaryl groups.
9. A compound according to claim 8, or a pharmaceutically acceptable salt thereof; wherein  $R^1$  is 4-pyridyl optionally substituted by halo,  $C_{1-4}$  alkyl  $C_{1-4}$  alkoxy or CN.

10. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein  $R^2$  is a 4- to 7-membered cycloalkyl substituted by  $R^3$ , or 4- to 7-membered heterocyclyl containing one nitrogen atom which is substituted by  $C(O)OR^4$ .

11. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein  $R^3$  is  $C_{3-8}$  alkyl which may contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl.

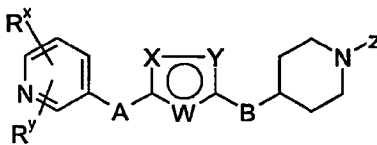
12. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein  $R^4$  is  $C_{2-8}$  alkyl,  $C_{2-8}$  alkenyl or  $C_{2-8}$  alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and may contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl, aryl, 5- to 6-membered heteroaryl containing one or two nitrogen atoms,  $C_{1-4}$  alkyl $C_{3-7}$  cycloalkyl or  $C_{1-4}$  alkylaryl, any of which may be substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^6$  and  $CO_2C_{1-4}$  alkyl.

13. A compound according to claim 12, or a pharmaceutically acceptable salt thereof, wherein  $R^4$  is  $C_{3-6}$  alkyl optionally substituted with up to 5 fluoro or chloro atoms, and which may contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl.

14. A compound according to any one of the preceding claims, or a pharmaceutically acceptable salt thereof, wherein  $R^5$  is  $C_{1-4}$  alkyl.

15. A compound of formula (I) as defined in any one of Examples 1, 3 to 8, 10 to 13, 16 to 50, or 52 to 149, or a pharmaceutically acceptable salt thereof.

16. A compound according to claim 1 having the formula (Id), or a pharmaceutically acceptable salt thereof:



(Id)

where two of W, X and Y are N, and the other is O;

A is  $-CH=CH-$  or  $(CH_2)_n$ ;

B is  $-CH=CH-$  or  $(CH_2)_n$ , where one of the  $CH_2$  groups may be replaced by O,  $NR^5$ ,  $S(O)_m$  or  $C(O)$ ;

n is independently 0, 1, 2 or 3, provided that not both n are 0;

m is independently 0, 1 or 2;

$R^x$  and  $R^y$  are independently selected from hydrogen, halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{3-7}$  cycloalkyl, aryl,  $OR^6$ , CN,  $NO_2$ ,  $S(O)_mR^6$ ,  $CON(R^6)_2$ ,  $N(R^6)_2$ ,  $NR^{10}COR^6$ ,  $NR^{10}SO_2R^6$ ,  $SO_2N(R^6)_2$ , a 4- to 7-membered heterocyclyl group and a 5- or 6-membered heteroaryl group;

Z is  $C(O)OR^4$ ,  $C(O)R^3$ ,  $S(O)_2R^3$ ,  $C(O)NHR^4$  or a 5- or 6-membered nitrogen containing heteroaryl group;

$R^3$  is  $C_{3-8}$  alkyl,  $C_{3-8}$  alkenyl or  $C_{3-8}$  alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and may contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl, aryl, heterocyclyl, heteroaryl,  $C_{1-4}$  alkyl $C_{3-7}$  cycloalkyl,  $C_{1-4}$  alkylaryl,  $C_{1-4}$  alkylheterocyclyl or  $C_{1-4}$  alkylheteroaryl, any of which may be optionally substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^6$ , CN,  $CO_2C_{1-4}$  alkyl,  $N(R^6)_2$  and  $NO_2$ ;

$R^4$  is  $C_{2-8}$  alkyl,  $C_{2-8}$  alkenyl or  $C_{2-8}$  alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and may contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl, aryl, heterocyclyl, heteroaryl,  $C_{1-4}$  alkyl $C_{3-7}$  cycloalkyl,  $C_{1-4}$  alkylaryl,  $C_{1-4}$  alkylheterocyclyl or  $C_{1-4}$  alkylheteroaryl, any of which may be substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^6$ , CN,  $CO_2C_{1-4}$  alkyl,  $N(R^6)_2$  and  $NO_2$ ;

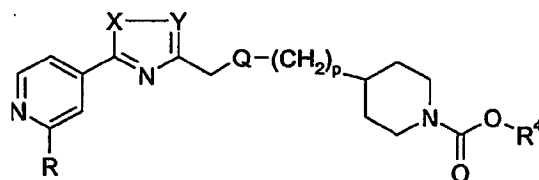
$R^5$  is hydrogen or  $C_{1-4}$  alkyl;

$R^6$  are independently hydrogen, or  $C_{1-4}$  alkyl,  $C_{3-7}$  cycloalkyl, aryl, heterocyclyl or heteroaryl, wherein the cyclic groups may be substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^9$ , CN,  $SO_2CH_3$ ,  $N(R^{10})_2$  and  $NO_2$ ; or a group  $N(R^{10})_2$  may form a 4- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from O and  $NR^{10}$ ;

$R^9$  is hydrogen,  $C_{1-2}$  alkyl or  $C_{1-2}$  fluoroalkyl; and

$R^{10}$  is hydrogen or  $C_{1-4}$  alkyl.

17. A compound according to claim 1 having the formula (Ie), or a pharmaceutically acceptable salt thereof:



(Ie)

wherein one of X and Y is N, and the other is O;

Q is O,  $NR^5$  or  $CH_2$ ;

R is hydrogen, halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{3-7}$  cycloalkyl, aryl,  $OR^6$ , CN,  $NO_2$ ,  $S(O)_mR^6$ ,  $CON(R^6)_2$ ,  $N(R^6)_2$ ,  $NR^{10}COR^6$ ,  $NR^{10}SO_2R^6$ ,  $SO_2N(R^6)_2$ , a 4- to 7-membered heterocyclyl group or a 5- or 6-membered heteroaryl group;

$R^4$  is  $C_{2-8}$  alkyl,  $C_{2-8}$  alkenyl or  $C_{2-8}$  alkynyl, any of which may be optionally substituted with up to 5 fluoro or chloro atoms, and contain a  $CH_2$  group that may be replaced by O, or  $C_{3-7}$  cycloalkyl, aryl, heterocyclyl, heteroaryl,  $C_{1-4}$  alkyl $C_{3-7}$  cycloalkyl,  $C_{1-4}$  alkylaryl,  $C_{1-4}$  alkylheterocyclyl or  $C_{1-4}$  alkylheteroaryl, any of which may be substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^6$ , CN,  $CO_2C_{1-4}$  alkyl,  $N(R^6)_2$  and  $NO_2$ ;

$R^5$  is  $C_{1-4}$  alkyl;

$R^6$  are independently hydrogen, or  $C_{1-4}$  alkyl,  $C_{3-7}$  cycloalkyl, aryl, heterocyclyl or heteroaryl, wherein the cyclic groups may be substituted with one or more substituents selected from halo,  $C_{1-4}$  alkyl,  $C_{1-4}$  fluoroalkyl,  $OR^9$ , CN,  $SO_2CH_3$ ,  $N(R^{10})_2$  and  $NO_2$ ; or a group  $N(R^{10})_2$  may form a 4- to 7-membered heterocyclic ring optionally containing a further heteroatom selected from O and  $NR^{10}$ ;

$R^9$  is hydrogen,  $C_{1-2}$  alkyl or  $C_{1-2}$  fluoroalkyl;

$R^{10}$  is hydrogen or  $C_{1-4}$  alkyl; and

p is 0 or 1.

18. A pharmaceutical composition comprising a compound according to any one of claims 1 to 17, including the compounds of provisos c) to e), or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable carrier.

19. A method for the treatment of a disease or condition in which GPR116 plays a role comprising a step of administering to a subject in need thereof an effective amount of a compound according to any one of claims 1 to 17, including the compounds of provisos a) to e), or a pharmaceutically acceptable salt thereof.

20. A method for the regulation of satiety comprising a step of administering to a subject in need thereof an effective amount of a compound according to any one of claims 1 to 17, including the compounds of provisos a) to e), or a pharmaceutically acceptable salt thereof.

21. A method for the treatment of obesity comprising a step of administering to a subject in need thereof an effective amount of a compound according to any one of claims 1 to 17, including the compounds of provisos a) to e), or a pharmaceutically acceptable salt thereof.

22. A method for the treatment of diabetes comprising a step of administering to a subject in need thereof an effective amount of a compound according to any one of claims 1 to 17, including the compounds of provisos a) to e), or a pharmaceutically acceptable salt thereof.